Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (canceled) A process for determining the status of a living organism, comprising the steps of:

(a) sampling cellular material which contains at least a first microtubule, a second microtuble, and a multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(b) imaging said first microtubule, said second microtubule, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second mircotubule,

(d) determining the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(e) determining the pattern of said microtubule associated proteins disposed between said first microtubule and said second microtubule,

(f) comparing the positions said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule, with historic phenotypic data, and

(f) comparing the pattern of said microtubule associated proteins disposed between said first microtubule and said second microtubule with historic phenotypic data.

2. (currently amended) ~~The process as recited in claim 1,~~ A process for determining the status of a living organism, comprising the steps of:

(a) sampling cellular material which contains at least a first microtubule, a second microtuble, and a multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(b) imaging said first microtubule, said second microtubule, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second mircotubule,

(c) determining the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(d) determining the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(e) comparing the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule, with historic phenotypic data, and

(f) determining the status of a living organism based on the comparison of the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule with said historic phenotypic data, wherein said positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule is determined by X-ray crystallography.

3. (canceled) The process as recited in claim 1, further comprising the step of determining the rates at which said multiplicity of microtubule associated proteins change said positions.

4. (canceled) The process as recited in claim 1, further comprising the step of determining the composition of said microtubule associated proteins.

5. (canceled) The process as recited in claim 4, wherein said compositions of said microtubule associated proteins are determined by protein isolation.

6. (currently amended) ~~The process as recited in claim 4,~~ A process for determining the status of a living organism, comprising the steps of:

(a) sampling cellular material which contains at least a first microtubule, a second microtuble, and a multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(b) imaging said first microtubule, said second microtubule, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second mircotubule,

(c) determining the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(d) determining the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(e) comparing the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule, with historic phenotypic data, and

(f) determining the status of a living organism based on the comparison of the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule with said historic phenotypic data, wherein said compositions of said microtubule associated proteins are determined by protein isolation, wherein said compositons of said microtubule associated proteins are determined by mass spectrometery.

7. (currently amended) A process for determining the status of a living organism, comprising the steps of:

(a) sampling cellular material which contains at least a first microtubule, a second microtuble, and a multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(b) imaging said first microtubule, said second microtubule, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second mircotubule,

(c) determining the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(d) determining the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(e) comparing the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule, with historic phenotypic data, and

(f) determining the status of a living organism based on the comparison of the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule with said historic phenotypic data, further comprising the step of determining the Qbit pattern of the tubulin conformation state, wherein said first microtubule and said ~~[[said]]~~ second microtubule is each comprised of said tubulin.

8. (currently amended) A process for determining the status of a living organism, comprising the steps of:

(a) sampling cellular material which contains at least a first microtubule, a second microtuble, and a multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(b) imaging said first microtubule, said second microtubule, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second mircotubule,

(c) determining the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(d) determining the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(e) comparing the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule, with historic phenotypic data, and

(f) determining the status of a living organism based on the comparison of the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule with said historic phenotypic data, further comprising determining the speeds of microtubule-assisted protein transport of protein secondary messengers.

9. (currently amended) A process for determining the status of a living organism, comprising the steps of:

(a) sampling cellular material which contains at least a first microtubule, a second microtuble, and a multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(b) imaging said first microtubule, said second microtubule, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second mircotubule,

(c) determining the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(d) determining the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(e) comparing the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule, with historic phenotypic data, and

(f) determining the status of a living organism based on the comparison of the pattern of said multiplicity of microtubule associated proteins disposed between

said first microtubule and said second microtubule with said historic phenotypic data, further comprising determining the destinations of microtubule assisted protein transport of protein secondary messengers.

10. (canceled) The process as recited in claim 1, further comprising adhering said sampled cells to a solid support.

11. (currently amended) ~~The process as recited in claim 10,~~ A process for determining the status of a living organism, comprising the steps of:

(a) sampling cellular material which contains at least a first microtubule, a second microtuble, and a multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(b) imaging said first microtubule, said second microtubule, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second mircotubule,

(c) determining the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(d) determining the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(e) comparing the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule, with historic phenotypic data, and

(f) determining the status of a living organism based on the comparison of the pattern of said multiplicity of microtubule associated proteins disposed between

said first microtubule and said second microtubule with said historic phenotypic data, further comprising adhering said sampled cells to a solid support, wherein said solid support is comprised of polystyrene.

12. (currently amended) A process for determining the status of a living organism, comprising the steps of:

(a) sampling cellular material which contains at least a first microtubule, a second microtuble, and a multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(b) imaging said first microtubule, said second microtubule, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second mircotubule,

(c) determining the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(d) determining the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(e) comparing the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule, with historic phenotypic data, and

(f) determining the status of a living organism based on the comparison of the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule with said historic phenotypic

data, wherein said ~~sampled cells are~~ cellular material is isolated and maintained as single cells.

13. (currently amended) A process for determining the status of a living organism, comprising the steps of:

(a) sampling cellular material which contains at least a first microtubule, a second microtuble, and a multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(b) imaging said first microtubule, said second microtubule, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second mircotubule,

(c) determining the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(d) determining the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(e) comparing the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule, with historic phenotypic data, and

(f) determining the status of a living organism based on the comparison of the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule with said historic phenotypic data, wherein said multiplicity of microtubule associated proteins are imaged by slow neutron imaging.

14. (currently amended) A process for determining the status of a living organism, comprising the steps of:

(a) sampling cellular material which contains at least a first microtubule, a second microtuble, and a multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(b) imaging said first microtubule, said second microtubule, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second mircotubule,

(c) determining the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(d) determining the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(e) comparing the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule, with historic phenotypic data, and

(f) determining the status of a living organism based on the comparison of the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule with said historic phenotypic data, further comprising the step of digitizing data produced by said imaging said first microtubule, said second microtubule, and said multiplicity of microtubule associated proteins disposed between said first microtubule, thereby producing digitized data.

15. (currently amended) ~~The process as recited in claim 14,~~ A process for determining the status of a living organism, comprising the steps of:

(a) sampling cellular material which contains at least a first microtubule, a second microtuble, and a multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(b) imaging said first microtubule, said second microtubule, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second mircotubule,

(c) determining the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(d) determining the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(e) comparing the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule, with historic phenotypic data, and

(f) determining the status of a living organism based on the comparison of the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule with said historic phenotypic data, further comprising the step of digitizing data produced by said imaging said first microtubule, said second microtubule, and said multiplicity of microtubule associated proteins disposed between said first microtubule, thereby producing

digitized data, further comprising the step of electronically manipulating said digitized data.

~~[[15]]~~ 16. (currently amended) The process as recited in claim 14, further comprising the step of analyzing said digitized data.

~~[[16]]~~ 17. (currently amended) A process for determining the status of a living organism, comprising the steps of:

(a) sampling cellular material which contains at least a first microtubule, a second microtuble, and a multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(b) imaging said first microtubule, said second microtubule, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second mircotubule,

(c) determining the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(d) determining the pattern of said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule,

(e) comparing the positions of said first microtuble, said second microtuble, and said multiplicity of microtubule associated proteins disposed between said first microtubule and said second microtubule, with historic phenotypic data, and

(f) determining the status of a living organism based on the comparison of the pattern of said multiplicity of microtubule associated proteins disposed between

said first microtubule and said second microtubule with said historic phenotypic data, further comprising the step of treating said living organism.

~~[[17]]~~ 18. (currently amended) The process as recited in claim ~~[[16]]~~17, wherein said living organism is treated by the application of external electromagnetic energy.

~~[[18]]~~ 19. (currently amended) The process as recited in claim ~~[[16]]~~17, wherein said living organism is treated with coherent phonon energy.

~~[[19]]~~ 20. (currently amended) The process as recited in claim ~~[[16]]~~17, further comprising the step of changing the attachment pattern of said microtubule associated proteins.

~~[[20]]~~ 21. (currently amended) The process as recited in claim ~~[[16]]~~17, further comprising the step of changing the amino acid sequence of ~~indvidual~~ individual microtubule associated proteins.